

U.S. Patent Application Serial No. 09/147,052  
Response filed January 10, 2005  
Reply to OA dated August 26, 2004

**AMENDMENTS TO THE CLAIMS:**

Please cancel claims 20-24, 27-31 and 34-38 without prejudice or disclaimer. Please amend claims 25, 26, 32 and 33 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Claims 1-24 (Canceled).**

**Claim 25 (Currently amended):** A recombinant Avipox virus having a DNA coding for a fusion protein, comprising:

(i) an antigenic protein isolated from *Mycoplasma gallisepticum* that causes an antibody-antigen reaction with *Mycoplasma gallisepticum* infected serum, and

(ii) a signal polypeptide of ~~Herpesvirus outer membrane protein~~ herpes virus gB protein, said signal polypeptide being ligated with said antigenic protein isolated from *Mycoplasma gallisepticum* at the N terminus thereof such that said antigenic protein is secreted extracellularly, and

wherein upon expression of said fusion protein in a host cell, said antigenic protein is secreted extracellularly.

**Claim 26 (Currently amended):** A recombinant live vaccine for use in fowl against *Mycoplasma gallisepticum* infection, comprising as an effective ingredient a recombinant Avipox virus comprising a DNA coding for a fusion protein, comprising:

(i) an antigenic protein isolated from *Mycoplasma gallisepticum* that causes an antibody-antigen reaction with *Mycoplasma gallisepticum* immune serum or *Mycoplasma gallisepticum* infected serum, and

(ii) a signal polypeptide of ~~Herpesvirus outer membrane protein~~ herpes virus gB protein, said signal polypeptide being ligated with said antigenic protein isolated from *Mycoplasma gallisepticum* at the N terminus thereof such that said antigenic protein is secreted extracellularly, and

wherein said fusion protein upon administration into a host cell, immunizes said host cell against subsequent infection with *Mycoplasma gallisepticum*, and said antigenic protein is secreted extracellularly.

**Claims 27 - 31 (Canceled).**

**Claim 32 (Currently amended):** A recombinant Avipox virus comprising a DNA coding for a fusion protein, comprising:

(i) an antigenic protein isolated from *Mycoplasma gallisepticum* that causes an antibody-antigen reaction with *Mycoplasma gallisepticum* immune serum or *Mycoplasma gallisepticum* infected serum, and

(ii) a signal polypeptide of ~~Herpesvirus outer membrane protein~~ herpes virus gB protein, said signal polypeptide being ligated with said antigenic protein isolated from *Mycoplasma gallisepticum* at the N terminus thereof such that said antigenic protein is secreted extracellularly, and

wherein said DNA comprises:

(i) a first DNA segment isolated from *Mycoplasma gallisepticum* that codes for an antigenic protein which causes an antibody-antigen reaction with *Mycoplasma gallisepticum* immune serum or *Mycoplasma gallisepticum* infected serum, and

(ii) a second DNA segment isolated from a Marek's disease virus gene that codes for a signal polypeptide of ~~Herpesvirus outer membrane protein~~ herpes virus gB protein, said first and second DNA segments being ligated to each other such that said antigenic protein is secreted extracellularly, and

wherein upon expression of said fusion protein in a host cell, said antigenic protein is secreted extracellularly.

**Claim 33 (Currently amended):** A recombinant live vaccine for use in fowl against *Mycoplasma gallisepticum* infection comprising as an effective ingredient a recombinant Avipox virus having a DNA coding for a fusion protein, comprising:

(i) an antigenic protein isolated from *Mycoplasma gallisepticum* that causes an antibody-antigen reaction with *Mycoplasma gallisepticum* immune serum or *Mycoplasma gallisepticum* infected serum, and

(ii) a signal polypeptide of ~~Herpesvirus outer membrane protein~~ herpes virus gB protein, said signal polypeptide being ligated with said antigenic protein isolated from *Mycoplasma gallisepticum* at the N terminus thereof such that said antigenic protein is secreted extracellularly, and

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wherein said DNA comprises:

(i) a first DNA segment isolated from *Mycoplasma gallisepticum* that codes for an antigenic protein which causes an antibody-antigen reaction with *Mycoplasma gallisepticum* immune serum or *Mycoplasma gallisepticum* infected serum, and

(ii) a second DNA segment isolated from a Marek's disease virus gene that codes for a signal polypeptide of ~~Herpesvirus outer membrane protein~~ herpes virus gB protein, said first and second DNA segments being ligated to each other such that said antigenic protein is secreted extracellularly, and

wherein said fusion protein upon administration into a host cell, immunizes said host cell against subsequent infection with *Mycoplasma gallisepticum*, and said antigenic protein is secreted ~~extracellularly~~ extracellularly.

**Claims 34 - 38 (Canceled).**

**Claim 39 (Previously presented):** A recombinant Avipox virus according to claim 32, wherein a sequence of said second DNA is codons 1-63 of SEQ ID NO:1 or codons 1-672 of SEQ ID NO:3.

**Claim 40 (Previously presented):** A recombinant Avipox virus according to claim 32, wherein a sequence of said DNA is SEQ ID NO:1 or SEQ ID NO:3.

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**Claim 41 (Previously presented):** A recombinant Avipox virus according to claim 32, wherein said antigenic protein causes an antibody-antigen reaction with *Mycoplasma gallisepticum* immune serum or *Mycoplasma gallisepticum* infected serum *in vivo*.

**Claim 42 (Canceled).**

**Claim 43 (Previously presented):** A recombinant virus according to claim 32, wherein said fusion protein does not include a membrane anchor peptide.

**Claim 44 (Previously presented):** A recombinant Avipox virus according to claim 32, wherein, when an avian cell is infected with said recombinant virus, said antigenic protein is secreted outside said avian cell.

**Claim 45 (Withdrawn):** A recombinant live vaccine according to claim 26, wherein a sequence of said DNA is SEQ ID NO:1.

**Claim 46 (Withdrawn):** A recombinant live vaccine according to claim 26, wherein a sequence of said DNA is SEQ ID NO:3.